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GENEVA

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WORKING PAPER ON REVISED DRAFT TEST GUIDELINES FOR
CHINESE CABBAGE (REVISION)

Document prepared by experts from Japan

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I. Subject of these Guidelines

These Test Guidelines apply to all varieties of *Brassica rapa* L. var. *pekinensis* (Lour.) Kitam. (= *Brassica pekinensis* (Lour.) Rupr.) and varieties of hybrids between that species and *Brassica rapa* L. as long as the latter varieties are similar to those of *Brassica rapa* L. var. *pekinensis* (Lour.) Kitam.

China proposed: to add the alternative Latin name of Chinese Cabbage “*Brassica rapa* L. ssp. *pekinensis* or *B. campestris* L. ssp. *pekinensis*”

II. Material Required

1. The competent authorities decide when, where and in what quantity and quality the plant seed required for testing the variety is to be delivered. Applicants submitting material from a State other than that in which the testing takes place must make sure that all customs formalities are complied with. As a minimum, for each year of test the following quantity of seed is recommended:

20 g.

The quality of the seed to be delivered should not be below the standards of seeds for certification or marketing in the country concerned, especially in regard to germination capacity and moisture content.

2. The plant material must not have undergone any treatment unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

III. Conduct of Tests

1. The minimum duration of tests should be normally two independent growing cycles.

2. The tests should be normally conducted at one place. If any important characteristics of the variety cannot be seen at that place, the variety may be tested at an additional place.

3. The tests should be carried out under conditions ensuring normal growth. The size of the plots should be such that plants or parts of plants may be removed for measuring and counting without prejudice to the observations which must be made up to the end of the growing period. As a minimum, each test should include a total of 60 plants for which should be divided between two or more replicates. Separate plots for observation and measuring can only be used if they have been subject to similar environmental conditions.

4. Additional tests for special purposes may be established.

IV. Methods and Observations

1. All observations determined by measuring or counting should be made on 20 plants or parts of 20 plants.

2. Unless otherwise indicated, all observations on the plant, the leaf and the head should be made at harvest maturity.
3. Unless otherwise indicated, all observations on the outer leaf should be made on its upper outer side.
4. For the assessment of uniformity of single cross hybrids a population standard of 1% with an acceptance probability of at least 95% should be applied. In case of a sample size of 60 plants the maximum number of off-types allowed would be 2. For open pollinated varieties the variability within the variety should not exceed the variability of comparable varieties already known. Interpretation of results should be made according to the rules for cross-pollinated varieties as stated in TG/1/3 “General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Description of New Varieties of Plants.”

V. Grouping of Varieties

1. The collection to be grown should be divided into groups to facilitate the assessment of distinctness. Characteristics which are suitable for grouping purposes are those which are known from experience not to vary, or to vary only slightly, within a variety and which in their various states are fairly evenly distributed within the collection.
2. It is recommended that the competent authorities use the following characteristics for grouping varieties:
 - (a) Head: shape in longitudinal section (characteristic 24)
 - (b) Head: type of formation (characteristic 25)
 - (c) Time of harvest maturity (characteristic 33)

VI. Characteristics and Symbols

1. To assess distinctness, uniformity and stability, the characteristics and their states as given in the Table of Characteristics should be used.
2. Notes (1 to 9), for the purposes of electronic data processing, are given opposite the states of expression for different characteristic.

3. Legend

(*) Characteristics that should be used every growing period for the examinations of all varieties and should always be included in the descriptions of the variety, except when the state of expression of a preceding characteristic or regional environmental conditions render this impossible.

(+) See Explanations on the Table of Characteristics in Chapter VIII.

VII. Table of Characteristics/Tableau des caractères/Merkmalstabelle/Tabla de caracteres

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1. Outer leaf: habit (at the beginning of head formation)					
erect				Osiris	1
semi-erect				Muso, Spectrum	2
horizontal				Bando	3
2. Plant: height (*)					
short				Regina	3
medium				Muso	5
tall				Shousai	7
3. Outer leaf: length					
short				Salad	3
medium				Muso	5
long				Shousai	7
4. Outer leaf: maximumwidth					
narrow				Salad	3
medium				Muso	5
broad				Bando	7

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
5. Outer leaf: shape					
(*) (before harvest maturity)					
(+)					
circular				Kenshin	1
broad obovate				Kaho	2
obovate				Muso	3
narrow obovate				Bando	4
narrow elliptic				Shousai	5
6. Outer leaf: apex					
(+)					
pointed				Shousai	1
rounded				Muso	2
truncated				Ousho	3
7. Outer leaf: number of blisters on inner side					
(*)					
few				Kinap, Sprinter	3
medium				Hopkin, Muso	5
many				Bando, Ming	7
8. Outer leaf: size of blisters on inner side					
small				Granat	3
medium				Regina	5
large					7

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
9. Outer leaf: color					
(*)					
yellow green				Kaho, Regina	1
true green				CrossNo.2, Muso, Hayamidori	2
grey green					3
10. <u>Varieties with true green color only:</u> Outer leaf: intensity of green color					
light				Cross No.2	3
medium				Muso	5
dark				Hayamidori	7
11. Outer leaf: anthocyanin coloration					
absent				Muso	1
present				Cross No.2	9
12. Outer leaf: glossiness					
weak				Kaho, Kinap	3
medium				Hopkin, Muso	5
strong				Shunjyu	7
13. Outer leaf: hairiness (at lower side)					
absent or very weak				Salad	1
weak				Cream, Kinap	3
medium				Shunjyu, Tardisto	5
strong				Muso	7
very strong					9

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
14. Outer leaf: profile in longitudinal section (excluding leaf base)					
concave				Hopkin	1
flat				Tardisto	2
convex				Chiko	3
15. Outer leaf: undulation of margin					
weak				Sixtyres, Kaho	3
medium				Spectrum, Cross No.2	5
strong				Shin-azuma, Chiko	7
16. Outer leaf: incisions of margin (at distal part)					
absent				Kenshin	1
weak				Kasumi, Regina	2
strong				Muso	3
17. Outer leaf: serration of margin (at base)					
weak				Kinap	3
medium				Tardisto	5
strong					7
18. Outer leaf: midrib in cross section (at mid-point)					
concave				Regina	1
flat				Kinap	2

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
19. Outer leaf: length of midrib					
(+)					
short				Hamamidori	3
medium				Muso	5
long				Shosai	7
20. Outer leaf: width of midrib (at base)					
narrow				Shousai	3
medium				Jade Pagoda	5
broad				Harumaki No1	7
21. Outer leaf: color of midrib					
white				Muso	1
light green					2
green					3
22. Head: height					
short				Senda	3
medium				Jade Pagoda, Muso	5
tall				Monument, Shousai	7
23. Head: maximum width					
narrow				Granat	3
medium				Jade Pagoda, Muso	5
broad					7

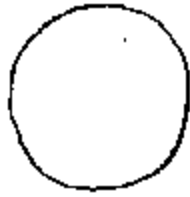
English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
24. Head: shape in longitudinal section					
(*)					
(+)					
circular				Kenshin	1
elliptic				Hayamidori	2
ovate				Shinjyu	3
obovate				Hamamidori	4
oblong				Chushu	5
narrow oblong				Shousai	6
25. Head: type of formation					
(*)					
open				Monument	1
half-open				Spectrum	2
closed				Kinap, Muso	3
26. <u>Closed head variety only</u>: Head: degree of overlapping leaf					
(*)					
low				Shousai	3
medium				Shinjyu	5
high				Cross No.2	7
27. Head: color of top					
white					1
yellow					2
yellow green				Kasumi	3
green				Salad, Muso, Bando	4

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
28. <u>Varieties with green</u>					
(*) top only: Head: intensity of green color					
light				Salad	3
medium				Muso	5
dark				Bando	7
29. Head: blistering of wrapper leaf					
absent or very weak					1
weak				Granat	3
medium				Regina	5
strong					7
very strong					9
30. Head: internal color					
(*)					
whitish					1
yellow				Muso	2
orange				Orange Queen	3
31. Head: firmness (at harvest maturity)					
very loose					1
loose				Granat	3
medium				Sixtyress	5
firm				Bando, Regina	7
very firm				Shunjyu	9

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
32. Head: apex of internal stem (at harvest maturity)					
pointed				Kaho	1
round				Muso	2
truncate				Syunju	3
33. Time of harvest maturity (*)					
very early				Kenshin	1
early				Regina, Sprinter	3
medium				Muso, Nestor	5
late				Chusyu, Granado	7
very late				Treasure Island	9

VIII. Explanations on the Table of Characteristics

Ad. 5: Outer leaf: shape (before harvest maturity)



1
circular



2
broad obovate



3
obovate



4
narrow obovate



5
narrow elliptic

Ad. 6: Outer leaf: apex



1
pointed

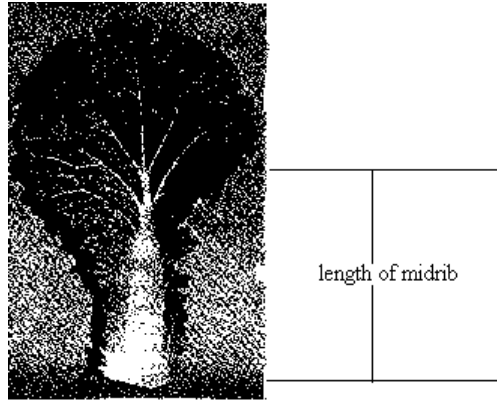


2
rounded

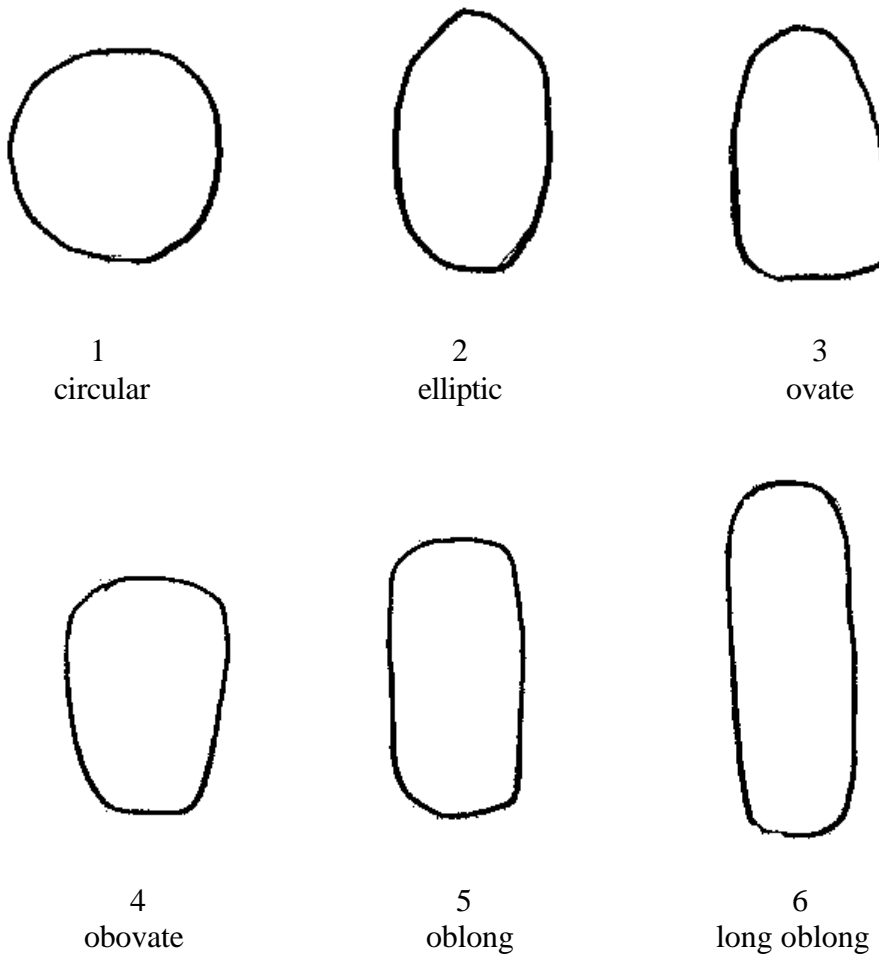


3
truncated

Ad. 19: Outer leaf: length of midrib



Ad. 24: Head: shape in longitudinal section



IX. Literature

UPOV Test Guidelines TG/105/3, 1987

Tsunoda, S., Hinata, K. and Gomez-Campo, C. 1980. *Brassica* Crops and Wild Allies. Biology and Breeding. Japan Scientific Press. Tokyo.

Shogakukan, 1991: The Grand Dictionary of Horticulture, 3. Pp. 560-563.

X. Technical Questionnaire

	Reference Number (not to be filled in by the applicant)
<p>TECHNICAL QUESTIONNAIRE to be completed in connection with an application for plant breeders' rights</p>	
1. Species	<p><i>(Brassica rapa L. var. pekinensis (Lour.) Kitam)</i> <i>(Brassica pekinensis (Lour.) Rupr)</i></p> <p>CHINESE CABBAGE</p>
2. Applicant (Name and address)	
3. Proposed denomination or breeder's reference	
4. Information on origin, maintenance and reproduction of the variety	<p>4.1 method of maintenance and reproduction</p> <p>4.2 Other information</p>

5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines; please mark the state of expression which best corresponds).

Characteristics	Example Varieties	Note
5.1 Plant: height (2)		
short	Regina	3[]
medium	Muso	5[]
tall	Shousai	7[]
5.2 Head: shape in longitudinal section (24)		
circular	Kenshin	1[]
elliptic	Hayamidori	2[]
ovate	Taibou 60days	3[]
obovate	Hamamidori	4[]
oblong	Chushu	5[]
long oblong	Shousai	6[]
5.3 Head: type of formation (25)		
open	Monument	1[]
half-open	Spectrum	2[]
closed	Kinap, Muso	3[]
5.4 Time of harvest maturity (33)		
very early	Kenshin	1[]
early	Regina, Sprinter	3[]
medium	Muso, Nestor	5[]
late	Chusyu, Granado	7[]
very late	Treasure Island	9[]

6. Similar varieties and differences from these varieties			
Denomination of similar variety	Characteristic in which the similar variety is different ^{o)}	State of expression of similar variety	State of expression of candidate variety
7. Additional information which may help to distinguish the variety			
7.1 Resistance to pests and diseases			
7.2 Special conditions for the examination of the variety			
7.3 Other information			
8. Authorization for release			
(a) Does the variety require prior authorization for release under legislation concerning the protection of the environment, human and animal health?			
Yes []		No []	
(b) Has such authorization been obtained?			
Yes []		No []	
If the answer to that question is yes, please attach a copy of such an authorization.			